Testimony of

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representing the

AMERICAN PUBLIC HEALTH ASSOCIATION

before the

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and the
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at a hearing on

Review of EPA's Proposed Ozone and Particulate Matter NAAQS Revisions

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Overview

Public health professionals help ensure that illness is prevented by taking early and effective action based on the best available scientific evidence. The proposed EPA standard for particulate matter meets APHA's criteria for environmental standards (1) it is based on well-designed scientific studies, performed by competent investigators who drew appropriate conclusions from the data and on sound judgment by EPA staff and scientific advisors; and (2) it is consistent with good public health practice.

Consistent with EPA's statutory mandate, APHA believes that standards should be based primarily on health, not cost, considerations.

Every day millions of people in the U.S. are exposed to fine particulate matter at levels significant enough to aggravate asthma and other chronic lung disease, make people more vulnerable to respiratory infections, send children and adults with breathing problems to emergency rooms, and shorten lives.

Many studies show an association between exposure to fine particulates and adverse health effects. We believe that EPA has proposed a scientifically sound standard, based both on the scientific evidence and the advice of EPA's Clean Air Scientific Advisory Committee (CASAC). Nineteen of the 21 members of CASAC support establishing a standard for fine particulate matter.

Every year we wait to adopt this standard, another 15,000 Americans will die premature deaths, another 9,000 Americans will be admitted to hospitals for heart and lung ailments, another 60,000 Americans will suffer bronchitis, another quarter of a million children will suffer acute respiratory infections, another quarter of a million will suffer cases of aggravated asthma, and we as a nation will lose $70 billion in health care costs and lost productivity.

The proposed EPA standard will protect health, prevent illness, disability, and death, and save billions of dollars. We urge its adoption.

Good morning, Mr. Chairmen and members of both the Health and Environment and Oversight and Investigations Subcommittees. My name is Barry Levy. I am a physician and epidemiologist, I have worked in the field of environmental and occupational health for more than 20 years as an educator, researcher, clinician, consultant, and program director. I am Board-certified in both Internal Medicine and Preventive Medicine. I have written or edited more than 100 publications, including 14 books and monographs, including a monograph on air pollution in Central and Eastern Europe. I am an Adjunct Professor of Community Health at Tufts University School of Medicine. I am an independent consultant in environmental and occupational health, in which role I continue to evaluate patients clinically.

I serve as president of APHA, the American Public Health Association, the oldest and largest association of its kind in the world. APHA is a nonpartisan professional association that is dedicated to the promotion and protection of the public's health. I am pleased to testify on behalf of APHA, which represents more than 50,000 public health professionals.

I will discuss the public health approach to the control of air pollution, the scientific evidence concerning the impact of fine particulate matter on the health of the public, and the reasons why APHA strongly supports the proposed Environmental Protection Agency (EPA) standard for particulate matter. Because I am on the particulate matter panel, I will not directly address the proposed EPA standard for ozone, which APHA also strongly supports and for which we have submitted written comments for the record.

I. The Public Health Approach to Environmental Health Protection

Public health is what we do as a society, collectively, to assure the conditions in which people can be healthy. Public health professionals play a leading role by identifying and analyzing patterns of illness -- and risks for illness -- in populations and by developing and implementing interventions to reduce illness

and the risk of illness. Our guiding principle is the prevention of illness before it occurs. Prevention saves lives and generally saves money. Public health professionals have a responsibility to ensure that illness is prevented by taking early and effective action based on the best available scientific evidence. This often means acting on the basis of incomplete, yet sufficient, scientific evidence in order to protect the health of the public.

Epidemiology is the scientific study of the distribution and determinants of disease. It is a core science of public health and its validity and value is accepted in the scientific literature of medicine, public health, and many other disciplines. Epidemiology has identified health problems, enabled us to understand causative and contributory factors, and helped to develop and evaluate preventive measures.

Life expectancy in the United States has increased by almost 30 years since the turn of the century, mainly due to public health improvements, including assuring safer food, safer workplaces, cleaner water, and cleaner air. At many times during the past 100 years, we as a society have assured conditions in which people can be healthy by adopting and implementing public policies based on incomplete, yet sufficient, scientific evidence. For example, for over two decades, the health-based standards of the Clean Air Act have been policies that have served this nation well. We have seen that during this period, major air pollutants decreased 30 percent while the gross domestic product grew 28 percent -- proof that public health protection and economic growth can occur in concert.

Throughout its 125-year history, APHA has been concerned about the impact of environmental pollution on human health. For many years, we have held that environmental standards should be based on three criteria: scientific evidence, sound judgment, and knowledge drawn from public health practice. The proposed EPA standard for particulate matter meets these criteria. It is based on well-designed scientific studies performed by competent investigators who drew

appropriate conclusions from the data. It is based on sound judgment by EPA staff and scientific advisors. It is consistent with good public health practice.

APHA also believes that standards should be based primarily on health, not cost, considerations. This approach is consistent with the EPA's statutory mandate to develop air quality standards primarily on the basis of their impact on human health. APHA agrees with Congress that economic and technological issues should not be primary considerations in the adoption of a standard, but that they be considered later -- during implementation.

II. EPA's Proposed Particulate Matter Standard Protects Public Health

Every day millions of people in the U.S. are exposed to fine particulate matter at levels significant enough to be a health concern. Fine particles, or soot, lodge deep in the lungs, aggravating asthma and other chronic lung disease, making people more vulnerable to respiratory infections, sending children and adults with breathing problems to emergency rooms, and shortening lives. Children, older individuals, those who are economically disadvantaged, and those with chronic illnesses are especially vulnerable.

Numerous studies demonstrate an association between exposure to fine particulate matter and adverse health effects. Many well- designed scientific investigations by competent researchers in cities around the world provide remarkably consistent results, findings that remain strong even after controlling for potentially confounding factors like smoking and hazardous occupational exposures. These studies have found that air pollution generally is associated with illness and death from heart and lung disease. Much of this illness represents exacerbation of chronic and disabling conditions; much of it leads to hospital admissions.

Recent studies have shown that illness and death are most strongly associated with fine particulates ($PM_{2.5}$) in the air. These studies provide strong

support for a causal relationship between fine particulate matter and adverse health effects.

We know how to reduce fine particulate matter in the air to protect the health of the public. But will we, as a nation, adopt the standard in order to ensure that fine particulate matter is reduced? We believe that EPA has proposed a scientifically sound standard, based both on the scientific evidence and the advice of EPA's Clean Air Scientific Advisory Committee (CASAC). Nineteen of the 21 members of CASAC support establishing a standard for fine particulate matter. We urge EPA to adopt the proposed standard to reduce human exposure to fine particulate matter.

The public health approach of using incomplete, yet sufficient, scientific evidence to protect the health of the public has stood the test of time. When there was incomplete, yet sufficient, scientific evidence showing an association between cigarette smoking and heart and lung disease, public health measures were adopted to reduce tobacco use. When there was incomplete, yet sufficient, scientific evidence showing an association between airborne lead levels and neurobehavioral disorders in children, public health measures were adopted to remove lead from gasoline. When there was incomplete, yet sufficient, scientific evidence showing an association between coarse particulate matter and lung disease, public health measures were adopted to reduce coarse particulate matter (PM_{10}) in the ambient air. In each of these three instances, researchers correctly identified a serious health hazard and then implemented effective public health measures. These early public health interventions prevented disease and saved lives.

Now there is incomplete, yet sufficient, scientific evidence showing an association between fine particulate matter ($PM_{2.5}$) and heart and lung disease. Will we as a nation act to assure the conditions in which people can be healthy, or not?

For every year we wait to adopt this standard, another 15,000 Americans will die premature deaths, another 9,000 Americans will be admitted to hospitals for heart and lung ailments, another 60,000 Americans will suffer bronchitis, another quarter of a million children will suffer acute respiratory infections, another quarter of a million will suffer cases of aggravated asthma, and we as a nation will lose $70 billion in health care costs and lost productivity.

We are not just talking about statistics. We are talking about our family members, our friends, our neighbors, our co-workers, and perhaps ourselves becoming ill and possibly dying because of involuntary exposure to hazardous air pollutants. If the standard is adopted, however, our children will have fewer attacks of asthma and other respiratory illnesses, and thus avoid many hospitalizations. Our parents will have a much lower chance of suffering from, and possibly dying of, pneumonia or other serious respiratory disease. Our brothers and sisters with chronic respiratory disease will suffer less from cough, shortness of breath, and other respiratory symptoms. Our employees or co-workers will have less illness and disability from respiratory disease, and thus fewer lost workdays and more productivity.

III. EPA's Proposed Ozone Standard Protects Public Health

APHA supports the EPA proposal to amend the current ozone standards as necessary to protect public health, warranted by a sound interpretation of the best scientific evidence available, and reflective of public health primary prevention principles. The science is clear that the adverse health effects associated with ozone exposure are both remarkably consistent and represent serious health threats.

Epidemiological studies have shown that when inhaled, even at very low levels, ozone can cause acute respiratory problems, aggravate asthma, cause temporary decreases in lung capacity in healthy adults, inflame lung tissues, lead to hospital admissions and emergency room visits, and impair the body's immune

system defenses by making people more susceptible to respiratory illnesses such as bronchitis and pneumonia.

APHA generally supports the EPA proposal to provide a more protective ozone standard. We believe a stricter standard is necessary to protect the public's health -- the science is clear that the adverse health effects associated with ozone represent serious health threats, especially when considered in terms of the enormous population potentially exposed. APHA believes a 0.07 ppm standard is the most appropriate to protect against the health effects of ozone, with an adequate margin of safety. EPA's own analysis suggests that the 0.08 ppm standard could present serious problems for vulnerable sub-populations and indicates that respiratory symptoms occur from 6-8 hour exposures to 0.08 ppm ozone. Levels of ozone at 0.07 ppm still cause measurable health problems that the public health community does not accept.

Inherent to this recommendation is the fact that the real-world population impact of decrements in lung functions, increased respiratory symptoms, and indicators of inflammation, even when transient and reversible, is substantial. APHA finds a 0.07 ppm standard to be prudently protective of vulnerable sub-populations and therefore the nation as a whole.

IV. The Call for the Release of the Harvard Raw Data

For the record, we are greatly concerned with the way the public debate over the release of the “raw data” underlying the Harvard Six Cities Study, and parts of the American Cancer Society Study has unfolded. Crucial matters of scientific policy underlying the debate have been ignored. There has been an unfortunate propensity for sound-byte attacks and an alarming subversion of the real ethical and legal issues. This does a great disservice to the American people, the research community, and the scientific endeavor to improve the health of all people living in the United States. There have been no credible charges that EPA or the Harvard

researchers have done anything but adhere stringently to accepted scientific, professional, and ethical standards in this matter.

When conducting an epidemiological study, the researcher typically gathers a wide range of very personal information about individuals' medical histories, lifestyles, etc. At a practical level, few people would consent to participate in epidemiological or medical studies if they were not confident that their privacy would remain intact. More crucially, public health and medical ethics, professional standards, and federal law do not allow the release of personal medical or health information without the informed consent of the study participant. Because of this, "raw data" is virtually never made available in public health or medical studies -- even when subpoenaed in a legal proceeding.

The most disappointing aspect of this debate, is that the ultimate compromise that is apparently being reached in all this, allowing an independent body, the Health Effects Institute, to review the data, was probably never in doubt. From the beginning, the Harvard researchers exhibited a willingness to accommodate the independent review needs of EPA and others once a mechanism was defined that would respect the Harvard researchers' overarching legal, professional, and ethical responsibilities to maintain the confidentiality of the data they had collected. I severely doubt any private citizen truly expects, as some have suggested, that simply because a study is funded, partially or in full, by public money, intensely private information collected in the course of that study should be public also.

In the end, it is those critics who most vociferously accuse EPA and Harvard of obstructing the rulemaking process in refusing to make the “raw data” readily publicly available are most at fault in seeking to undermine the integrity of the research and rulemaking process. Therefore while we strongly support the final compromise, we are extremely disappointed that important scientific, ethical and legal issues have been ignored.

V. EPA's Proposals Must Be Adopted to Protect Public Health

We know that certain individuals are at elevated risk for poor health outcomes due to ozone and particulate matter -- children, older individuals, persons with heart and lung disease, people with immuno-suppression, and asthmatics. Recent estimates show that as many as one in four individuals is in one of those vulnerable sub-populations. These people are at-risk for adverse health effects under current ozone and particulate matter standards. EPA estimates show that 122 million individuals in the United States reside in areas that would not meet the proposed ozone standard and 74 million live in areas that would not meet the proposed particulate matter standard. Adoption of both the ozone and particulate matter standards is necessary to protect public health.

The proposed EPA standards will protect health, prevent illness, disability, and death, and save our nation billions of dollars. APHA supports EPA's scientifically sound policy decisions in revising both the particulate matter and ozone standards of the Clean Air Act. We oppose any Congressional effort that precludes EPA from moving forward.

These proposed standards are warranted by a sound interpretation of the best scientific evidence available and are reflective of public health primary prevention principles. The proposed standards are a sound investment in America's future. They will assure conditions in which people can be healthy. They will enable us to be healthier people and a healthier nation.

A review of the scientific evidence, public health experience with this issue, and the severity of the adverse health effects associated with fine particulates all militate strongly against waiting for further research when the correct public health decision is already evident. More research will help further define the relationship between fine particulates and health consequences, but it is exceedingly unlikely to show that fine particulates do not cause those health consequences.

As in 1963, when the Surgeon General issued his warning regarding smoking and lung cancer despite having incomplete evidence as to actual causation, we were extremely unlikely to find later that smoking did not cause lung cancer. History has proven the correctness of the Surgeon General's choice. History will show we made the correct choice here also -- if this Congress allows the proposed standards to go forward.

Thank you, Mr. Chairmen, for the opportunity to speak on this critically important public health issue. I would be pleased to address any questions at this time.